



```
MM      MM      MM      MM      GGGGGGGG      CCCCCCCC      RRRRRRRR      TTTTTTTTTT      DDDDDDDD      EEEEEEEEEEE      LL
MM      MM      MM      MM      GGGGGGGG      CCCCCCCC      RRRRRRRR      TTTTTTTTTT      DDDDDDDD      EEEEEEEEEEE      LL
MMM     MMM     MMM     MMM     GG          CC          RR          TT          DD          EE          LL
MMM     MMM     MMM     MMM     GG          CC          RR          TT          DD          EE          LL
MM      MM      MM      MM      GG          CC          RR          TT          DD          EE          LL
MM      MM      MM      MM      GG          CC          RR          TT          DD          EE          LL
MM      MM      MM      MM      GG          CC          RRRRRRRR      TT          DD          EEEEEEEEE      LL
MM      MM      MM      MM      GG          CC          RRRRRRRR      TT          DD          EEEEEEEEE      LL
MM      MM      MM      MM      GG      GGGGGG      CC          RR      RR      TT          DD          EE          LL
MM      MM      MM      MM      GG      GGGGGG      CC          RR      RR      TT          DD          EE          LL
MM      MM      MM      MM      GG          CC          RR      RR      TT          DD          EE          LL
MM      MM      MM      MM      GG          CC          RR      RR      TT          DD          EE          LL
MM      MM      MM      MM      GG      GGGGGG      CCCCCCCC      RR          RR          TT          DDDDDDDD      EEEEEEEEEEE      LLLLLLLLLLL
MM      MM      MM      MM      GGGGGG      CCCCCCCC      RR          RR          TT          DDDDDDDD      EEEEEEEEEEE      LLLLLLLLLLL
```

```
LL      IIIIII      SSSSSSSS
LL      IIIIII      SSSSSSSS
LL      II          SS
LL      II          SS
LL      II          SS
LL      II          SS
LL      II          SSSSSS
LL      II          SSSSSS
LL      II          SS
LL      II          SS
LL      II          SS
LL      II          SS
LLLLLLLLLL      IIIIII      SSSSSSSS
LLLLLLLLLL      IIIIII      SSSSSSSS
```

(2)	48	DECLARATIONS
(2)	52	MACROS
(3)	139	DATA STORAGE AND MESSAGE STRINGS
(6)	235	INITIALIZATION
(7)	283	FORCE ERRORS IN CRETVA
(8)	310	FORCE ERRORS FROM DELTVA
(9)	338	SUBROUTINES TO CALL THE SERVICES
(10)	446	MISCELLANEOUS SUBROUTINES

```
0000 1 :  
0000 2 :  
0000 3 :  
0000 4 :  
0000 5 :  
0000 6 :  
0000 7 :  
0000 8 :  
0000 9 :  
0000 10 :  
0000 11 :  
0000 12 :  
0000 13 :  
0000 14 :  
0000 15 :  
0000 16 :  
0000 17 :  
0000 18 :  
0000 19 :  
0000 20 :  
0000 21 :  
0000 22 :  
0000 23 :  
0000 24 :  
0000 25 :  
0000 26 :  
0000 27 :  
0000 28 :  
0000 29 :  
0000 30 :  
0000 31 :  
0000 32 :  
0000 33 :  
0000 34 :  
0000 35 :  
0000 36 :  
0000 37 :  
0000 38 :  
0000 39 :  
0000 40 :  
0000 41 :  
0000 42 :  
0000 43 :  
0000 44 :  
0000 45 :  
0000 46 :
```

MEMORY MANAGEMENT SERVICES TEST #3

TITLE MMGCRTDEL - TEST OF \$CRETVA/\$DELTVA SYSTEM SERVICES  
IDENT 'V04-000'

\*\*\*\*\*

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++  
FACILITY: USER MODE MEMORY MANAGEMENT SERVICES TEST  
ABSTRACT: THIS SET OF ROUTINES TESTS THE MEMORY MANAGEMENT SERVICES  
ENVIRONMENT: USER MODE DIAGNOSTIC  
AUTHOR: PETER H. LIPMAN , CREATION DATE: 6-JAN-77  
MODIFIED BY:  
V02-012 SHZ0003 Stephen Zalewski 20-Aug-1980  
Added further tests to system services tested in this  
program. Also incorporated program into MMG test  
package.

```
0000 48      .SBTTL  DECLARATIONS
0000 49      :
0000 50      : INCLUDE FILES:
0000 51      :
0000 52      :      .SBTTL  MACROS
0000 53      :
0000 54      :      MACROS:
0000 55      :
0000 56      .MACRO  LIST
0000 57      .LIST   MEB
0000 58      .ENDM   LIST
0000 59
0000 60      .MACRO  NLIST
0000 61      .NLIST  MEB
0000 62      .ENDM   NLIST
0000 63
0000 64      .MACRO  CRETVA  STARTVA,ENDVA,STATUS=S^#SS$ NORMAL,-
0000 65                      INADR=W^INRANGE,RETADR=W^RETRANGE
0000 66      LIST
0000 67          .IF      NB,STARTVA
0000 68          MOVL     STARTVA,W^INRANGE
0000 69          .ENDC
0000 70          .IF      NB,ENDVA
0000 71          MOVL     ENDVA,W^INRANGE+4
0000 72          .ENDC
0000 73          MOVZWL    STATUS,R3
0000 74          MOVAL     INADR,R0
0000 75          MOVAL     RETADR,R1
0000 76          BSBW      CRETVA$UBR
0000 77      NLIST
0000 78      .ENDM   CRETVA
0000 79
0000 80      .MACRO  DELTVA  STARTVA,ENDVA,STATUS=S^#SS$ NORMAL,-
0000 81                      INADR=W^INRANGE,RETADR=W^RETRANGE
0000 82      LIST
0000 83          .IF      NB,STARTVA
0000 84          MOVL     STARTVA,W^INRANGE
0000 85          .ENDC
0000 86          .IF      NB,ENDVA
0000 87          MOVL     ENDVA,W^INRANGE+4
0000 88          .ENDC
0000 89          MOVZWL    STATUS,R3
0000 90          MOVAL     INADR,R0
0000 91          MOVAL     RETADR,R1
0000 92          BSBW      DELTVA$UBR
0000 93      NLIST
0000 94      .ENDM   DELTVA
0000 95
0000 96      .MACRO  EXPREG  PAGCNT,REGION=#0,STATUS=S^#SS$_NORMAL,-
0000 97                      RETADR=W^RETRANGE
0000 98      LIST
0000 99          MOVZWL    STATUS,R3
0000 100         MOVL     PAGCNT,R4
0000 101         MOVAL     RETADR,R1
0000 102         .IF      IDN,<REGION>,<#0>
0000 103         CLRL      R5
0000 104         .IFF
```

```
0000 105          MOVL    REGION,R5
0000 106          .ENDC
0000 107          BSBW    EXPREGSUBR
0000 108          NLIST
0000 109          .ENDM    EXPREG
0000 110
0000 111          .MACRO  RANGECHK ONOROFF
0000 112          LIST
0000 113          .IF     IDN <ONOROFF>,<OFF>
0000 114          BICL    #CTLSM_RNGCHK,W^CTLFLG
0000 115          .IFF
0000 116          BISL    #CTLSM_RNGCHK,W^CTLFLG
0000 117          .ENDC
0000 118          NLIST
0000 119          .ENDM    RANGECHK
0000 120
0000 121          :
0000 122          : EQUATED SYMBOLS:
0000 123          :
0000 124          $SSDEF
0000 125          $SECDEF
0000 126          $PRTDEF
0000 127          $GBLINI
0000 128          $VIELD  CTL,0,<-
0000 129          <MEMLOOP,,MASK>,-
0000 130          <TSTLOOP,,MASK>,-
0000 131          <PIDMSG,,MASK>,-
0000 132          <RNGCHK,,MASK>-
0000 133          >
0000 134          PRT$C_NONE=104
00000010 0000 135          :
0000 136          : OWN STORAGE:
0000 137          :
```

:DEFINE CONTROL BITS IN R3  
:LOOP IN MEMORY WRITE LOOP  
:REDO ENTIRE TEST FROM TOP  
:PUT PROCESS ID IN EACH TYPEOUT  
:ON IF CHECKING RETURN RANGE

```
0000 139 .SBTTL DATA STORAGE AND MESSAGE STRINGS
00000000 140 .PSECT DATA0,PAGE,WRT,NOEXE
00000008 0000 141 INRANGE:
00000010 0008 142 .BLKL 2
00000006 0010 143 RETRANGE:
00000018 0014 144 .BLKL 2
0000001C 0018 145 CTLFLG: .LONG CTL$M_TSTLOOP!CTL$M_PIDMSG
00000020 001C 146 SAVEND: .BLKL 1
00000003 0020 147 HIGHPOADR:
00000028 0024 148 .BLKL 1 ;LAST BYTE ADDRESS IN PO SPACE
00000000 0028 149 PID: .BLKL 1 ;PROCESS ID
00000000 0020 150 MAXPASSCNT:
00000028 0024 151 .LONG 3 ;NUMBER OF PASSES TO RUN
00000000 0028 152 PASSCNT:
00000000 0024 153 .BLKL 1 ;PASS COUNTER
00000000 0028 154 PREVPROT:
00000000 0028 155 FAB: $FAB FAC=PUT, FNA=OUTNAMADR, FNS=OUTNAMSIZ ;FAB FOR OUTPUT
00000000 0078 156 RAB: $RAB FAB=FAB ;RECORD ACCESS BLOCK FOR OUTPUT
00000000 00BC 157 MSGLEN: .BLKL 1 ;RETURN LENGTH FROM FAO
00000000 00C0 158 MSGBUFD: .LONG MSGBUFSIZ,MSGBUF ;MESSAGE BUFFER DESCRIPTOR
00000000 00C8 159 PIDMSGD:
00000000 00C8 160 .LONG MSGBUF-PIDMSG,PIDMSG
00000000 00D0 161 ;
00000000 00D0 162 ; ***** DO NOT SEPARATE OR REORDER THE FOLLOWING LINES
00000000 00D0 163 ;
00000000 00D0 164 MSGBUFID:
00000000 00D0 165 CRLF: .BYTE ^015,^012
20 53 53 45 43 4F 52 50 00D2 166 .ASCII $PROCESS $
20 20 20 20 00DA 167 PIDMSG: .ASCII $ $
00000017E 00DE 168 MSGBUF: .BLKB 160 ;MESSAGE BUFFER USED BY FAO
000000A0 017E 169 MSGBUFSIZ=-MSGBUF
017E 170 ;
017E 171 ; ***** DO NOT SEPARATE OR REORDER THE PRECEEDING LINES
017E 172 ;
```

```
00000000 174 .PSECT CODE,PAGE,NOWRT,EXE
0000 175
0000 176 OUTNAMADR:
54 55 50 54 55 4F 24 53 59 53 0000 177 .ASCII /SYS$OUTPUT/
0000000A 000A 178 OUTNAMSIZ=-OUTNAMADR
000A 179
000A 180 CRETVAERRADR:
52 52 45 20 41 56 54 45 52 43 2F 21 000A 181 .ASCII $!/CRETVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F 0016
41 57 20 53 55 54 41 54 53 20 2C 4C 0022
4C 55 4F 48 53 20 2C 4C 58 21 20 53 002E
003A
21 20 3D 20 52 44 41 4E 49 09 2F 21 0042 182 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58 004E
20 4C 58 21 20 3D 20 52 44 41 54 45 005A
0066
00000063 006D 183 CRETVAERRSIZ=-CRETVAERRADR
006D 184
006D 185 DELTVAERRADR:
52 52 45 20 41 56 54 4C 45 44 2F 21 006D 186 .ASCII $!/DELTVA ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F 0079
41 57 20 53 55 54 41 54 53 20 2C 4C 0085
4C 55 4F 48 53 20 2C 4C 58 21 20 53 0091
009D
21 20 3D 20 52 44 41 4E 49 09 2F 21 00A5 187 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
52 20 20 2C 4C 58 21 20 2D 20 4C 58 00B1
20 4C 58 21 20 3D 20 52 44 41 54 45 00BD
00C9
00000063 00D0 188 DELTVAERRSIZ=-DELTVAERRADR
00D0 189
00D0 190 EXPREGERRADR:
52 52 45 20 47 45 52 50 58 45 2F 21 00D0 191 .ASCII $!/EXPREG ERROR - PC = !XL, STATUS WAS !XL, SHOULD BE !XL$
58 21 20 3D 20 43 50 20 2D 20 52 4F 00DC
41 57 20 53 55 54 41 54 53 20 2C 4C 00E8
4C 55 4F 48 53 20 2C 4C 58 21 20 53 00F4
0100
20 3D 20 54 4E 43 47 41 50 09 2F 21 0108 192 .ASCII $!/ PAGCNT = !SL, REGION = P!UB SPACE, $
20 4E 4F 49 47 45 52 20 2C 4C 53 21 0114
45 43 41 50 53 20 42 55 21 50 20 3D 0120
012C
4C 58 21 20 3D 20 52 44 41 54 45 52 012E 193 .ASCII $RETADR = !XL - !XL!/$
013A
00000072 0142 194 EXPREGERRSIZ=-EXPREGERRADR
0142 195
0142 196 RANGERRADR:
4E 41 52 20 4E 52 55 54 45 52 2F 21 0142 197 .ASCII $!/RETURN RANGE ERROR - LOCATION = !XL$
4C 20 2D 20 52 4F 52 52 45 20 45 47 014E
58 21 20 3D 20 4E 4F 49 54 41 43 4F 015A
4C
21 20 3D 20 52 44 41 4E 49 09 2F 21 0167 198 .ASCII $!/ INADR = !XL - !XL, RETADR = !XL - !XL!/$
45 52 20 2C 4C 58 21 20 2D 20 4C 58 0173
2D 20 4C 58 21 20 3D 20 52 44 41 54 017F
018B
0000004F 0191 199 RANGERRSIZ=-RANGERRADR
0191 200
0191 201 IDMSGADR:
4E 41 4D 20 59 52 4F 4D 45 4D 2F 21 0191 202 .ASCII $!/MEMORY MANAGEMENT SERVICES TEST #3 (CRTDEL), PASS !UL!/$
```

MMGCRTDEL  
V04-000

J 4  
- TEST OF \$CRETVA/\$DELTVA SYSTEM SERVICE 16-SEP-1984 02:00:44 VAX/VMS Macro V04-00  
DATA STORAGE AND MESSAGE STRINGS 5-SEP-1984 01:58:02 [MMGTST.SRC]MMGCRTDEL.MAR;1

Page 6  
(4)

56 52 45 53 20 54 4E 45 4D 45 47 41 019D  
33 23 20 54 53 45 54 20 53 45 43 49 01A9  
50 20 2C 29 4C 45 44 54 52 43 28 20 01B5  
2F 21 4C 55 21 20 53 53 41 01C1  
00000039 01CA  
01CA  
01CA  
20 20 2A 2A 2A 2A 2A 20 20 20 2F 21 01CA  
4E 20 4C 4C 49 57 20 54 53 45 54 20 01D6  
53 55 20 4E 55 52 20 45 42 20 57 4F 01E2  
20 52 41 4C 55 47 45 52 20 47 4E 49 01EE  
2A 20 20 20 45 43 41 50 53 20 41 56 01FA  
2A 2A 2A 2A 0206  
20 2F 21 020A  
00000043 020D  
020D  
020D  
4C 55 21 020D  
00000003 0210

203 IDMSGsiz=.-IDMSGADR

204

205 RUN1\_MSGADR:

206 .ASCII \$!/ \*\*\*\*\* TEST WILL NOW BE RUN USING REGULAR VA SPACE \*\*\*\*\*\$

207 .ASCII \$!/ \$

208 RUN1\_MSGsiz=.-RUN1\_MSGADR

209

210 PIDCTLADR:

211 .ASCII \$!UL\$

212 PIDCTLSiz=.-PIDCTLADR

	0210	214	:	
	0210	215	:	STRING DESCRIPTORS
	0210	216	:	
	0210	217	:	.ALIGN LONG
	0210	218	:	
	0210	219	:	CRETVAERR:
0000000A'00000063	0210	220	:	.LONG CRETVAERRSIZ,CRETVAERRADR
	0218	221	:	DELTVAERR:
0000006D'00000063	0218	222	:	.LONG DELTVAERRSIZ,DELTVAERRADR
	0220	223	:	EXPREGERR:
000000D0'00000072	0220	224	:	.LONG EXPREGERRSIZ,EXPREGERRADR
	0228	225	:	RANGERR:
00000142'0000004F	0228	226	:	.LONG RANGERRSIZ,RANGERRADR
	0230	227	:	IDMSG:
00000191'00000039	0230	228	:	.LONG IDMSGISIZ,IDMSGADR
	0238	229	:	RUN1_MSG:
000001CA'00000043	0238	230	:	.LONG RUN1_MSGSIZ,RUN1_MSGADR
	0240	231	:	PIDCTL:
0000020D'00000003	0240	232	:	.LONG PIDCTLSIZ,PIDCTLADR
	0248	233	:	

```
0248 235 .SBTTL INITIALIZATION
0248 236 *****
0248 237 PROGRAM DESCRIPTION:
0248 238
0248 239 THIS PROGRAM TESTS THE FOLLOWING SYSTEM SERVICES:
0248 240 $CRETVA, $DELTVA
0248 241
0248 242 THE PROGRAM FORCES POSSIBLE ERROR PATHS FOR THE ABOVE MENTIONED
0248 243 SYSTEM SERVICES. THREE PASSES ARE MADE THROUGH THE TEST LOOP
0248 244 TO ENSURE PATH REPEATABILITY. ONLY REGULAR VA SPACE IS USED IN
0248 245 THIS TEST PROGRAM.
0248 246
0248 247 REFER TO MASDS:[MMGSTS.COM]MMGTST.RAP FOR FURTHER INFORMATION
0248 248 REGARDING JUST HOW COMPLETELY THE ABOVE MENTIONED SYSTEM SERVICES
0248 249 ARE TESTED BY THIS PROGRAM.
0248 250
0248 251 *PRIVILEGES:
0248 252 THIS PROGRAM NEEDS NO SPECIAL PRIVILEGES TO EXECUTE.
0248 253 *****
0248 254
0248 255 START HERE
0248 256
0000 0248 START: .WORD 0 ;ENTRY MASK
OE 50 E9 024A $OPEN W^FAB ;OPEN THE FILE '$OUTPUT'
09 50 E8 0255 BLBC R0,10$ ;BRANCH IF ERROR
00000024'EF 01 D0 0258 $CONNECT W^RAB ;CONNECT THE RECORD ACCESS BLOCK
50 0000001C'EF 3C 0263 BLBS R0,20$
0266 262 10$: $EXIT,S R0 ;EXIT WITH STATUS IN R0
026F 263 20$: MOVL #1,PASSCNT ;INITIALIZE THE PASS COUNT
0276 264 $RESUME,S PID ;SET UP PROCESS ID
0285 265 MOVZWL -PID,R0
028C 266 $FAO,S PIDCTL,MSGLEN,PIDMSGD,R0 ;INIT THE PROCESS ID STRING
02A4 267
02A4 268 INFORM OPERATOR THAT TESTS WILL BE RUN USING ONLY NORMAL VA SPACE
02A4 269
0010'CF 038A 30 02A4 $FAO,S RUN1,MSG,MSGLEN,MSGBUFD ;INFORM OPR NORMAL VA USED FOR TESTS
0010'CF 04 CA 02BA 271 BSBW TYPEMSGBUF
02BD 272 BICL #CTL$M_PIDMSG,W^CTLFLG ;STOP PROCESS ID FROM PRINTING
02C2 273 RSTART:
02C2 274 RANGECHK ON
02C7 275 $FAO,S IDMSG,MSGLEN,MSGBUFD,PASSCNT
02E4 276 BSBW TYPEMSGBUF
02E7 277 EXPREG #1
53 01 3C 02E7 MOVZWL S^SS$ _NORMAL,R3
54 01 D0 02EA MOVL #1,R4
51 0008'CF DE 02ED MOVAL W^RETRANGE,R1
55 D4 02F2 CLRL R5
026D 30 02F4 BSBW EXPREGSUBR
52 0008'CF 7D 02F7 278 MOVQ W^RETRANGE,R2
0000'CF 52 7D 02FC 279 MOVQ R2,W^INRANGE
0014'CF 52 D0 0301 280 MOVL R2,W^SAVEND
0306 281
```

```
0306 283 .SBTTL FORCE ERRORS IN CRETVA
0306 284 :
0306 285 : FORCE ERRORS FROM CRETVA
0306 286 :
0306 287 :
0000'CF 80000200 8F DO 0306 CRETVA #^X80000200,#^X80000A00,#SS$ NOPRIV ;SYSTEM ADDRESS
0004'CF 80000A00 8F DO 030F MOVL #^X80000200,W^INRANGE
53 24 3C 0318 MOVL #^X80000A00,W^INRANGE+4
50 0000'CF DE 031B MOVZWL #SS$ NOPRIV,R3
51 0008'CF DE 0320 MOVAL W^INRANGE,R0
01C1 30 0325 MOVAL W^RETRANGE,R1
BSBW CRETVASUBR
0328 288 CRETVA #^X7FFEC801,#^X7FFECD01,#SS$ PAGOWNVIO ;KERNAL STACK
0000'CF 7FFEC801 8F DO 0328 MOVL #^X7FFEC801,W^INRANGE
0004'CF 7FFECD01 8F DO 0331 MOVL #^X7FFECD01,W^INRANGE+4
53 01EC 8F 3C 033A MOVZWL #SS$ PAGOWNVIO,R3
50 0000'CF DE 033F MOVAL W^INRANGE,R0
51 0008'CF DE 0344 MOVAL W^RETRANGE,R1
019D 30 0349 BSBW CRETVASUBR
034C 289 CRETVA W^SAVEND,#1030-1,#SS$ VASFULL ;FILL THE PAGE TABLE
0000'CF 0014'CF DO 034C MOVL W^SAVEND,W^INRANGE
0004'CF 3FFFFFFF 8F DO 0353 MOVL #1030-1,W^INRANGE+4
53 0244 8F 3C 035C MOVZWL #SS$ VASFULL,R3
50 0000'CF DE 0361 MOVAL W^INRANGE,R0
51 0008'CF DE 0366 MOVAL W^RETRANGE,R1
017B 30 036B BSBW CRETVASUBR
0018'CF 000C'CF DO 036E 290 MOVL W^RETRANGE+4,W^HIGHPOADR ;SAVE HIGH ADDRESS
0000'CF 0008'CF 7D 0375 291 MOVQ
037C 292 CRETVA W^RETRANGE,W^INRANGE
53 01 3C 037C MOVZWL S^#SS$ NORMAL,R3
50 0000'CF DE 037F MOVAL W^INRANGE,R0
51 0008'CF DE 0384 MOVAL W^RETRANGE,R1
015D 30 0389 BSBW CRETVASUBR
038C 293 :
038C 294 : CONTINUE FORCING CRETVA ERRORS
038C 295 :
038C 296 :
DELTVA ;DELETE WHAT WAS CREATED
53 01 3C 038C MOVZWL S^#SS$ NORMAL,R3
50 0000'CF DE 038F MOVAL W^INRANGE,R0
51 0008'CF DE 0394 MOVAL W^RETRANGE,R1
0161 30 0399 BSBW DELTVASUBR
52 0014'CF DO 039C 297 MOVL W^SAVEND,R2
0000'CF 52 DO 03A1 298 MOVL R2,W^INRANGE
0004'CF 0600 C2 DE 03A6 299 MOVAL ^X600(R2),W^INRANGE+4
03AD 300 CRETVA ;CREATE 4 PAGES
53 01 3C 03AD MOVZWL S^#SS$ NORMAL,R3
50 0000'CF DE 03B0 MOVAL W^INRANGE,R0
51 0008'CF DE 03B5 MOVAL W^RETRANGE,R1
012C 30 03BA BSBW CRETVASUBR
0200 C2 62 62 90 03BD 301 MOVB (R2),(R2)
0200 C2 90 03C0 302 MOVB ^X200(R2),^X200(R2)
03C7 303 CRETVA ;REFERENCE FIRST 2
;CREATE OVER THEM (DELETE 1ST)
53 01 3C 03C7 MOVZWL S^#SS$ NORMAL,R3
50 0000'CF DE 03CA MOVAL W^INRANGE,R0
51 0008'CF DE 03CF MOVAL W^RETRANGE,R1
0112 30 03D4 BSBW CRETVASUBR
03D7 304 DELTVA ;DELETE THEM ALL
03D7
```

50	0000'CF	DE	03DA		MOVAL	W^INRANGE,R0	
51	0008'CF	DE	03DF		MOVAL	W^RETRANGE,R1	
	0116	30	03E4		BSBW	DELTVASUBR	
			03E7	305	CRETVA	STATUS=#SS\$ _ACCVIO,-	
			03E7	306		INADR=W^4	;INACCESSIBLE INPUT RANGE
	53 OC	3C	03E7		MOVZWL	#SS\$ _ACCVIO,R3	
50	0004'CF	DE	03EA		MOVAL	W^4,R0	
51	0008'CF	DE	03EF		MOVAL	W^RETRANGE,R1	
	00F2	30	03F4		BSBW	CRETVASUBR	
			03F7	307	CRETVA	STATUS=#SS\$ _ACCVIO,-	
			03F7	308		RETADR=W^8	;INACCESSIBLE RETURN RANGE
	53 OC	3C	03F7		MOVZWL	#SS\$ _ACCVIO,R3	
50	0000'CF	DE	03FA		MOVAL	W^INRANGE,R0	
51	0008'CF	DE	03FF		MOVAL	W^8,R1	
	00E2	30	0404		BSBW	CRETVASUBR	

```
.SBTTL FORCE ERRORS FROM DELTA
0407 310
0407 311 :
0407 312 : FORCE ERRORS FROM DELTA
0407 313 :
0407 314
0010'CF 08 CA 0407 RANGECHK OFF
040C 315 DELTA BICL #CTLSM_RNGCHK,W^CTLFLG ;DELETE LENVID
50 53 01 3C 040C MOVZWL S^SS$ NORMAL,R3
51 0000'CF DE 040F MOVAL W^INRANGE,R0
0008'CF DE 0414 MOVAL W^RETRANGE,R1
00E1 30 0419 BSBW DELTVASUBR
0010'CF 08 CB 041C 316 RANGECHK ON
0421 317 DELTA BISL #CTLSM_RNGCHK,W^CTLFLG
0000'CF 80000200 8F DO 0421 #^X80000200,#^X80000A00,#SS$ NOPRIV ;SYSTEM ADDRESS
0004'CF 80000A00 8F DO 042A MOVL #^X80000200,W^INRANGE
53 24 3C 0433 MOVL #^X80000A00,W^INRANGE+4
50 0000'CF DE 0436 MOVZWL #SS$ NOPRIV,R3
51 0008'CF DE 043B MOVAL W^INRANGE,R0
00BA 30 0440 MOVAL W^RETRANGE,R1
0443 318 DELTA BSBW DELTVASUBR ;ALREADY DELETED
0000'CF 00 DO 0443 MOVL #0,W^INRANGE
0004'CF 00 DO 0448 MOVL #0,W^INRANGE+4
53 01 3C 044D MOVZWL S^SS$ NORMAL,R3
50 0000'CF DE 0450 MOVAL W^INRANGE,R0
51 0008'CF DE 0455 MOVAL W^RETRANGE,R1
00A0 30 045A BSBW DELTVASUBR
0000'CF 7FFEFFFF 8F DO 045D 319 DELTA #<1231-<12829>-1>,W^INRANGE,#SS$ PAGOWNVIO ;ACCESS POINTER PAGE
0004'CF 0000'CF DO 045D MOVL #<1231-<12829>-1>,W^INRANGE
53 01EC 8F 3C 046D MOVL W^INRANGE,W^INRANGE+4
50 0000'CF DE 0472 MOVZWL #SS$ PAGOWNVIO,R3
51 0008'CF DE 0477 MOVAL W^INRANGE,R0
007E 30 047C MOVAL W^RETRANGE,R1
0000'CF 0014'CF DO 047F 320 MOVL W^SAVEND,W^INRANGE
0014'CF 00000600 8F C1 0486 321 ADDL3 #^X600,W^SAVEND,W^INRANGE+4
0004'CF 048F
0492 322 DELTA STATUS=#SS$ _ACCVIO,-
0492 323 INADR=W^4 ;INPUT RANGE NOT ACCESSIBLE
50 53 0C 3C 0492 MOVZWL #SS$ _ACCVIO,R3
51 0004'CF DE 0495 MOVAL W^4,R0
0008'CF DE 049A MOVAL W^RETRANGE,R1
005B 30 049F BSBW DELTVASUBR
04A2 324 DELTA STATUS=#SS$ _ACCVIO,-
04A2 325 RETADR=W^8 ;RETURN RANGE INACCESSIBLE
50 53 0C 3C 04A2 MOVZWL #SS$ _ACCVIO,R3
51 0000'CF DE 04A5 MOVAL W^INRANGE,R0
0008'CF DE 04AA MOVAL W^8,R1
004B 30 04AF BSBW DELTVASUBR
04B2 326 CRETVA ;GET SOME PAGES
50 53 01 3C 04B2 MOVZWL S^SS$ NORMAL,R3
51 0000'CF DE 04B5 MOVAL W^INRANGE,R0
0008'CF DE 04BA MOVAL W^RETRANGE,R1
0027 30 04BF BSBW CRETVASUBR
04C2 327 DELTA STATUS=#SS$ _ACCVIO,-
04C2 328 RETADR=W^INRANGE ;DELETE PAGE CONTAINING RETURN RANGE
53 0C 3C 04C2 MOVZWL #SS$ _ACCVIO,R3
```

50	0000'CF	DE	04C5		MOVAL	W^INRANGE,R0
51	0000'DF	DE	04CA		MOVAL	2W^INRANGE,R1
	002B	30	04CF		BSBW	DELTVASUBR
			04D2	329		
			04D2	330	:	END OF LOOP
			04D2	331	:	
OC 0024'CF	0020'CF	F3	04D2	332	AOBLEQ	W^MAXPASSCNT,W^PASSCNT,1608
	50 01	D0	04DA	333	150\$:	MOVL #1,R0
			04DD	334	SEXIT_S	R0
	FDD9	31	04E6	335	160\$:	BRW RSTART
			04E9	336		

```
04E9 338 .SBTTL SUBROUTINES TO CALL THE SERVICES
04E9 339
04E9 340 INPUT:
04E9 341
04E9 342 R0 = INADR
04E9 343 R1 = RETADR
04E9 344 R3 = DESIRED STATUS
04E9 345
04E9 346 OUTPUT:
04E9 347
04E9 348 R2 PRESERVED
04E9 349
04E9 350 $CRETVA SUBROUTINE:
04E9 351 $CRETVA S (R0),(R1)
51 FD16 CF DE 04F6 352 MOVAL W^CRETVAERR,R1 ;ERROR CONTROL STRING
04FB 353 BRB CHECK1
04FD 354
04FD 355 INPUT:
04FD 356
04FD 357 R0 = INADR
04FD 358 R1 = RETADR
04FD 359 R3 = DESIRED STATUS
04FD 360
04FD 361 OUTPUT:
04FD 362
04FD 363 R2 PRESERVED
04FD 364
04FD 365 $DELTVA SUBROUTINE:
04FD 366 $DELTVA S (R0),(R1)
51 FDOA CF DE 050A 367 MOVAL W^DELTVAERR,R1 ;ERROR CONTROL STRING
050F 368 BRB CHECK1
0511 369 CHECK1:
53 50 D1 0511 370 CMPL R0,R3 ;STATUS AS DESIRED
53 4B 13 0514 371 BEQL 10$ ;BRANCH IF YES
53 0244 8F B1 0516 372 CMPW #SS$_VASFULL,R3 ;IF EXPECTING VIRTUAL ADDRESS SPACE FULL
50 05 12 0518 373 BNEQ 5$
50 1C B1 051D 374 CMPW #SS$_EXQUOTA,R0 ;THEN EXCEEDS QUOTA MAY ALSO BE RETURNED
54 54 DD 0520 375 BEQL 10$
54 04 AE DD 0522 376 5$: PUSHL R4
0524 377 MOVL 4(SP),R4 ;ADDRESS OF ERROR
0528 378 $FAO_S (R1),MSGLEN,MSGBUFD,R4,R0,R3,-
0528 379 INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
10 BA 055B 380 POPR #^M<R4>
00E7 30 055D 381 BSBW TYPMSGBUF
05 0560 382 RSB
0561 383 10$:
0561 384 BRW RANGECHK ;GO CHECK THE RETURN RANGE
0564 385
0564 386 INPUT:
0564 387
0564 388 R1 = RETADR
0564 389 R3 = DESIRED STATUS
0564 390 R4 = PAGCNT
0564 391 R5 = REGION
0564 392
0564 393 OUTPUT:
0564 394
```

```
0564 395 : R2 PRESERVED
0564 396 :
0564 397 EXPREGSUBR:
0564 398 SEXREG S R4 (R1) R5
51 FCA9 CF DE 0573 399 MOVAL W^EXPREGERR,R1 ;ERROR CONTROL STRING
0578 400 CHECK2:
0578 401 CMPL R0,R3 ;STATUS AS DESIRED?
0578 402 BEQL 10$ ;BRANCH IF YES
057D 403 PUSHL R6
56 04 AE DO 057F 404 MOVL 4(SP),R6 ;ADDRESS OF ERROR
0583 405 $FAO_S (R1),MSGLEN,MSGBUFD,R6,R0,R3,R4,R5,-
0583 406 RETRANGE,RETRANGE+4
0040 8F BA 05AE 407 POPR #M<R6>
0092 30 05B2 408 BSBW TYPEMSGBUF
05 05B3 409 RSB
0000'CF 0008'CF DO 05B6 410 10$: MOVL W^RETRANGE,W^INRANGE ;MAKE INPUT RANGE LOOK LIKE CRETVA/D
54 54 09 D7 05BD 411 DECL R4
0004'CF 0000'CF 54 C1 05BF 412 ASHL #9,R4,R4
00 11 05C3 413 ADDL3 R4,W^INRANGE,W^INRANGE+4
05CD 414 BRB RANGECHK ;AND CHECK THE RETURN RANGE
73 0010'CF 03 E1 05CD 415 RANGECHK:
05CD 416 BBC #CTL$V_RNGCHK,W^CTLFLG,40$ ;BRANCH IF RANGE CHECK IS DISABLED
70 50 E9 05D3 417 BLBC R0,40$ ;IF ERROR IN SERVICE, SKIP THE RANGE
50 0000'CF 7D 05D6 418 MOVQ W^INRANGE,R0 ;R0 = STARVA, R1 = ENDVA
51 50 D1 05DB 419 CMPL R0,R1 ;WHICH DIRECTION?
12 1A 05DE 420 BGTRU 10$ ;BRANCH IF BACKWARDS
04 1F 05E0 421 BLSSU 5$ ;BRANCH IF FORWARDS
OC 50 1E E0 05E2 422 BBS #30,R0,10$ ;FOR EQUAL, P0 SPACE FORWARDS, P1 BA
05E6 423 :
05E6 424 : REQUESTED RANGE IS FORWARDS
05E6 425 :
50 01FF 8F AA 05E6 426 5$: BICW #^X1FF,R0 ;FROM BYTE 0 OF STARTVA
51 01FF 8F AB 05E8 427 BISW #^X1FF,R1 ;THROUGH LAST BYTE OF ENDVA
0A 11 05F0 428 BRB 20$
05F2 429 :
05F2 430 : GOING BACKWARDS IN VIRTUAL ADDRESS SPACE
05F2 431 :
50 01FF 8F AB 05F2 432 10$: BISW #^X1FF,R0 ;LAST BYTE OF STARTVA
51 01FF 8F AA 05F7 433 BICW #^X1FF,R1 ;THROUGH FIRST BYTE OF ENDVA
0008'CF 50 D1 05FC 434 20$: CMPL R0,W^RETRANGE ;IS THIS WHAT WAS RETURNED?
07 12 0601 435 BNEQ 30$ ;BRANCH IF NOT, ERROR
000C'CF 51 D1 0603 436 CMPL R1,W^RETRANGE+4 ;THIS ONE OK TOO?
3C 13 0608 437 BEQL 40$ ;BRANCH IF YES, RANGE OK
53 04 AE DO 060A 438 30$: PUSHL R3 ;SAVE REGISTER
060C 439 MOVL 4(SP),R3 ;TO USE FOR ERROR PC
0610 440 $FAO_S <W^RANGERR>,MSGLEN,MSGBUFD,R3,- ;FORMAT THE ERROR MESSAGE
0610 441 INRANGE,INRANGE+4,RETRANGE,RETRANGE+4
08 BA 0641 442 POPR #M<R3> ;RESTORE SAVE REGISTER
0001 30 0643 443 BSBW TYPEMSGBUF ;OUTPUT THE ERROR MESSAGE
05 0646 444 40$: RSB ;AND RETURN
```

```
0647 446 .SBTTL MISCELLANEOUS SUBROUTINES
0647 447 :
0647 448 : TYPE A MESSAGE
0647 449 : MSGBUF IS THE ADDRESS OF THE BEGINNING OF THE STRING
0647 450 : MSGLEN CONTAINS THE SIZE (IN BYTES) OF THE STRING
0647 451 :
0647 452 TYPEMSGBUF:
0647 453 MOVL W^MSGLEN,R0 ;SIZE TO R0
0647 454 MOVAL W^MSGBUF,R1 ;ADDRESS TO R1
0647 455 BBC #CTL$V P$DMSG,W^CTLFLG,5$ ;BRANCH IF NO PROCESS ID REQUIRED
0647 456 MOVAL W^MSGBUFID,R1 ;ADDRESS INCLUDING PID MSG
0647 457 ADDL S^#<MSGBUF-MSGBUFID>,R0 ;INCLUDE EXTRA BYTES IN COUNT
0647 458 5$:
0647 459 MOVL R1,W^RAB+RAB$L_RBF ;SET BUFFER ADDRESS
0647 460 MOVW R0,W^RAB+RAB$W_RSZ ;AND SIZE
0647 461 $PUT W^RAB ;OUTPUT THE MESSAGE
0647 462 BLBC R0,20$
0647 463 RSB
0647 464 20$: $EXIT,S R0 ;EXIT WITH ERROR STATUS
0647 465 :
0647 466 : INPUTS:
0647 467 :
0647 468 : 0(SP) = ADDRESS OF ERROR
0647 469 : R1 = ADDRESS OF FORMAT CONTROL STRING
0647 470 :
0647 471 : OUTPUTS:
0647 472 :
0647 473 : R2 PRESERVED
0647 474 :
0647 475 PROBERR:
0647 476 PUSHL R5
0647 477 MOVL 4(SP),R5
0647 478 $FAO,S (R1),MSGLEN,MSGBUFD,R5
0647 479 POPR- #^M<R5>
0647 480 BSBW TYPEMSGBUF
0647 481 RSB
0647 482
0647 483
0647 484 .END START
```

50 00BC'CF DO 0647 453  
51 00DE'CF DE 0647 454  
08 0010'CF 02 E1 0651 455  
51 00D0'CF DE 0657 456  
50 0E' CO 065C 457  
00A0'CF 51 DO 065F 458  
009A'CF 50 BO 0664 459  
01 50 E9 0669 461  
05 0674 462  
0677 463  
0678 464  
0681 465  
0681 466  
0681 467  
0681 468  
0681 469  
0681 470  
0681 471  
0681 472  
0681 473  
0681 474  
0681 475  
55 55 DD 0681 476  
55 04 AE DO 0683 477  
20 BA 0687 478  
FFA4 30 069E 479  
05 06A0 480  
06A3 481  
06A4 482  
06A4 483  
06A4 484

MMGCRTDEL  
Symbol table

- TEST OF \$CRETVA/\$DELTVA SYSTEM SERVICE 16-SEP-1984 02:00:44 VAX/VMS Macro V04-00 Page 16  
5-SEP-1984 01:58:02 [MMGTST.SRC]MMGCRTDEL.MAR;1 (10)

\$\$TAB	= 00000078	R	02	PASSCNT	00000024	R	02
\$\$TABEND	= 000000BC	R	02	PID	0000001C	R	02
\$\$TMP	= 00000000			PIDCTL	00000240	R	03
\$\$TMP1	= 00000001			PIDCTLADR	00000200	R	03
\$\$TMP2	= 000000CF			PIDCTLSIZ	= 00000003		
\$\$T1	= 00000000			PIDMSG	000000DA	R	02
\$\$T2	= 00000004			PIDMSGD	000000C8	R	02
BIT...	= 00000004			PREVPROT	00000028	R	02
CHECK1	00000511	R	03	PROBERR	00000681	R	03
CHECK2	00000578	R	03	PRTSC_NONE	= 00000010		
CRETVAERR	00000210	R	03	RAB	00000078	R	02
CRETVAERRADR	0000000A	R	03	RAB\$B_RAC	= 0000001E		
CRETVAERRSIZ	= 00000063			RAB\$C_BID	= 00000001		
CRETVASUBR	000004E9	R	03	RAB\$C_BLN	= 00000044		
CRLF	000000D0	R	02	RAB\$C_SEQ	= 00000000		
CTLSM_MEMLOOP	= 00000001			RAB\$C_CTX	= 00000018		
CTLSM_PIDMSG	= 00000004			RAB\$C_RBF	= 00000028		
CTLSM_RNGCHK	= 00000008			RAB\$C_ROP	= 00000004		
CTLSM_TSTLOOP	= 00000002			RAB\$W_RSZ	= 00000022		
CTLSV_MEMLOOP	= 00000000			RANGECHK	000005CD	R	03
CTLSV_PIDMSG	= 00000002			RANGERR	00000228	R	03
CTLSV_RNGCHK	= 00000003			RANGERRADR	00000142	R	03
CTLSV_TSTLOOP	= 00000001			RANGERRSIZ	= 0000004F		
CTLFLG	00000010	R	02	RETRANGE	00000008	R	02
DELTVAERR	00000218	R	03	RSTART	000002C2	R	03
DELTVAERRADR	0000006D	R	03	RUN1_MSG	00000238	R	03
DELTVAERRSIZ	= 00000063			RUN1_MSGADR	000001CA	R	03
DELTVASUBR	000004FD	R	03	RUN1_MSGSIZ	= 00000043		
EXPREGERR	00000220	R	03	SAVEID	00000014	R	02
EXPREGERRADR	000000D0	R	03	SIZ...	= 00000001		
EXPREGERRSIZ	= 00000072			\$\$\$ACCVIDEO	= 0000000C		
EXPREGSUBR	00000564	R	03	\$\$\$EXQUOTA	= 0000001C		
FAB	00000028	R	02	\$\$\$NOPRIV	= 00000024		
FAB\$C_BID	= 00000003			\$\$\$NORMAL	= 00000001		
FAB\$C_BLN	= 00000050			\$\$\$PAGOWNVIO	= 000001EC		
FAB\$C_SEQ	= 00000000			\$\$\$VASFULL	= 00000244		
FAB\$C_VAR	= 00000002			START	00000248	R	03
FAB\$L_ALQ	= 00000010			SYSSCONNECT	*****	GX	03
FAB\$L_FOP	= 00000004			SYSSCRETVA	*****	GX	03
FAB\$V_CHAN_MODE	= 00000002			SYSSDELTVA	*****	GX	03
FAB\$V_FILE_MODE	= 00000004			SYSSEXIT	*****	GX	03
FAB\$V_LNM_MODE	= 00000000			SYS\$XPREG	*****	GX	03
FAB\$V_PUT	= 00000000			SYSSFAO	*****	X	03
FAB\$W_GBC	= 00000048			SYSSOPEN	*****	GX	03
HIGHPOADR	00000018	R	02	SYSSPUT	*****	GX	03
IDMSG	00000230	R	03	SYSSRESUME	*****	GX	03
IDMSGADR	00000191	R	03	TYPMSGBUF	00000647	R	03
IDMSGSIZ	= 00000039						
INRANGE	00000000	R	02				
MAXPASSCNT	00000020	R	02				
MSGBUF	000000DE	R	02				
MSGBUFD	000000C0	R	02				
MSGBUFID	000000D0	R	02				
MSGBUFSIZ	= 000000A0						
MSGLEN	000000BC	R	02				
OUTNAMADR	00000000	R	03				
OUTNAMSIZ	= 0000000A						

! Psect synopsis !

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 ( 0.)	00 ( 0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$AB\$\$	00000000 ( 0.)	01 ( 1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
DATA0	0000017E ( 382.)	02 ( 2.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC PAGE
CODE	000006A4 ( 1700.)	03 ( 3.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC PAGE

! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	10	00:00:00.09	00:00:02.13
Command processing	82	00:00:00.78	00:00:05.80
Pass 1	306	00:00:10.95	00:00:39.66
Symbol table sort	0	00:00:01.15	00:00:03.94
Pass 2	112	00:00:02.38	00:00:09.66
Symbol table output	12	00:00:00.09	00:00:00.19
Psect synopsis output	3	00:00:00.04	00:00:00.07
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	527	00:00:15.49	00:01:01.45

The working set limit was 1350 pages.  
64539 bytes (127 pages) of virtual memory were used to buffer the intermediate code.  
There were 50 pages of symbol table space allocated to hold 856 non-local and 14 local symbols.  
484 source lines were read in Pass 1, producing 20 object records in Pass 2.  
41 pages of virtual memory were used to define 34 macros.

! Macro library statistics !

Macro library name	Macros defined
-\$255\$DUA28:[SYS.OBJ]LIB.MLB;1	0
-\$255\$DUA28:[SYSLIB]STARLET.MLB;2	25
TOTALS (all libraries)	25

1120 GETS were required to define 25 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:MMGCRTDEL/OBJ=OBJ\$:MMGCRTDEL MSRC\$:MMGCRTDEL/UPDATE=(ENH\$:MMGCRTDEL)+EXECMLS/LIB

0236

AH-BT13A-SE  
VAX/VMS V4.0

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